

MANUFACTURING EXTENSION PARTNERSHIP

Success Stories from the Field

Beech-Nut Nutrition Corp.

New York Manufacturing Extension Partnership

Mohawk Valley Applied Technology Corporation Rejuvenates Beech-Nut Nutrition

Client Profile:

Beech-Nut Nutrition Corporation, located in Canajoharie, New York, employs 430 people. Founded in 1891, the company has long been the most dominate economic factor in this community manufacturing raw, bulk food into all natural baby food and cereals. Today, Beech-Nut is the among the Mohawk Valley's largest private sector employers and largest purchasers of agricultural products in this largely rural community.

Situation:

Beech-Nut currently holds 10 to 12 percent of the U.S. and Canadian baby food markets. Like most manufacturers in upstate New York, Beech-Nut was pressured to reduce product costs by retailers feeling increased pressure from large outlets, including Wal-Mart, to drive down prices. Baby food is particularly sensitive to this pressure since its customers are typically young families with little discretionary income. As a result, the company contacted the Mohawk Valley Applied Technology Corporation (MVATC), the New York Manufacturing Extension Partnership (NYMEP), a NIST MEP network affiliate, regional center for Mohawk Valley, to conduct an assessment of the plant and operations.

Solution:

During the assessment, MVATC determined that a large portion of the costs associated with processing raw vegetables occurred at the peeling and pureeing stage. For example, when a vegetable hit the line it would first be peeled using steam, then cooked and then mashed or pureed. MVATC explored the option of mashing the produce first and then cooking it. By mashing the produce first, the surface area of the produce would increase; thereby enabling Beech-Nut to reduce the amount of energy used to cook the produce. Further examination determined that the steam peeling processes could be replaced with a more efficient mechanical process, which would result in increased yields and decreased waste. This assessment led to the scoping of a new process and the need for different equipment. With MVATC's assistance, the company also applied for and received funding assistance to help purchase the necessary equipment.

After the assessment, MVATC identified three primary project objectives: 1) increase the yield of the processed produce; 2) decrease the amount of energy used to process the food; and 3) decrease the amount of waste generated. The challenge of increasing yields was addressed with the introduction of a Bertocchi CX-20 Extractor, which pureed the produce cold before pumping it through a plate heat exchanger. The introduction of the new equipment was preceded by a Bertocchi pilot program that ran successfully within the facility with smaller units. Using the new equipment and technology resulted in major changes to how Beech-Nut processed sweet potatoes, apples, pears and squash. Due to the higher process yields, a larger percentage of each fruit or vegetable became baby food and less became waste. Energy usage was decreased by expanding the surface area of produce allowing for more efficient cooking and by removing the waste portion of the food prior to cooking so energy is not

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used to cook waste. Beyond the energy savings, the new process was more effective in separating the usable portion of the food generating higher yields, which resulted in a corresponding decrease in the amount of waste sent to the Canajoharie Publicly Owned Treatment Works (CPOTW).

Additionally, this new process eliminated the steam peeler for sweet potatoes and combined the processing of apples, pears, squash and sweet potatoes into one line resulting in even greater production efficiencies.

The process changes implemented by MVATC have enabled Beech-Nut to stay competitive in a very cost conscious marketplace. Beech-Nut's project with MVATC has been very successful in producing benefits for the company, the community and potentially for the agriculture industry in New York State. The Village of Canajoharie has benefited from the project due to the substantial reduction in waste now sent to the aging Canajoharie Publicly Owned Treatment Works, which has increased capacity, improved efficiency, and reduced costs at the facility. The State of New York will also gain because the lower costs for Beech-Nut will improve its competitive position and help retain an important company in Montgomery County and because the lower costs may lead to an increase in market share for the company that in turn will increase the amount of produce being purchased from New York growers.

Results:

- * Increased production yield by 4 to 9 percent, depending on vegetable.
- * Decreased waste generated by 5,000 to 10,000 lbs. per day.
- * Energy savings of 45 Kw /yr and 3.2 Billion BTUs.
- * Process line consolidation of two (2) lines.
- * Decreased maintenance costs by \$5,000 annually.
- * Reduced air emissions by 160,000 lb. of NOX.
- * Achieved a more competitive and profitable position.

Testimonial:

"Through MVATC's efforts, Beech-Nut was able to acquire a key piece of equipment and change our processes that has lead to an increase market share by improving our competitive position. We were also able to reduce our environmental impact to the local landfill and waste water treatment facility which makes us a better corporate citizen to the local community."

Jeffery Heiser, Plant Manager